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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,842	01/30/2004	Rabih Abou-Chakra	Q79655	3849
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SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				
			EXAMINER BARON, HENRY	
			ART UNIT 2616	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Sf

Office Action Summary	Application No. 10/766,842	Applicant(s) ABOU-CHAKRA ET AL.	
	Examiner Henry Baron	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/17/2004</u> | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

INFORMALITIES

Abstract

1. The abstract of the disclosure is objected to because the abstract should not contain legal terms such as "said" and "means". The abstract should be in the range of 50-150 words. The abstract should not refer to either figures or figure elements. The abstract must not contain the title. The title should be in first page of the specification.

2. Correction is required. See MPEP § 608.01(b).

The following guidelines illustrate the preferred layout for the specification of a utility application.

These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Specification

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4. The Specification of the disclosure is objected to because the Specification should contain a brief description of the drawings. The abstract must not contain the title. The title should be in first page of the specification.

5. Correction is required. See MPEP § 608.01(f).

Claim Objections

6. Claim 9 is objected to because of the following informalities: Claim 9 is dependent on Claim 9. The Examiner will examine the Claim 9 as dependent on Claim 8.

7. Appropriate correction is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1- 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Danneels et al (U.S. Patent 5663951), hereafter Danneels in view of Ishibashi et al, A Synchronization Mechanism for Continuous Media in Multimedia Communication, INFOCOM '95. Fourteenth Annual Joint Conference of the IEEE Computer and Communications Societies. Bringing Information to People. Proceedings. IEEE 2-6 April 1995 Page(s): 1010 - 1019 vol.3. hereafter Ishibashi

10. Daneels teaches of an audio and video data processing device for multimedia communication across an asynchronous network. (Fig 1; Figure Element (FE) 100, FE 110) between a first pair of audio communication terminal (FE 104 and 108) and video communication terminal (FE 102 and 106) and a like second pair (FE 100; Conferencing System B) where the terminals are LAN type (4: [0050+]) with connection means for setting up video and audio link of the two pairs (Figure 1; read analog video and

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audio, Conferencing System A and B) and video and audio links between the two pairs (FE 110 and 4: [0050-0063]). The nature of audio and video signals are typically asynchronous, i.e. not synchronous as demonstrated in speech and images, thus the audio and video terminals are asynchronous.

11. However Daneels does not explicitly teach of an asynchronous network with random transmission times.

12. By contrast, Ishibashi teaches of a digital network to support multimedia communications that preserves the temporal relation among media stream (Section 1, paragraph 1.). Further, Ishibashi teaches random transmission times where he contrasts his paper to previous work in the field citing that "... the network delay bounds are not always known." (Section 1, paragraph 4.).

13. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the teaching of Daneels with the random transmission times teachings of Ishibashi to form a network of asynchronous audio and video media streams with random transmission times. This would be advantageous since a network synchronization mechanism based on media streams with random transmission times are more realistic in modeling the way packets (or media units) are transported across networks.

14. With regards to Claim 2, Ishibashi teaches of a device with first dating means that attaches a transmit time mark and an identifier to audio and video (A/V) data before their transmission to the second like A/V terminal pair. (Section 2; Media Synchronization model; read data as media unit; transmit time mark as timestamp; audio and video data as M media streams I – M, Figure 1) across the local network (Figure 1; read high speed network) and attach a receive time mark to the audio and video data from the second pair containing an identifier and a transmit time mark. (Section 2; Media Synchronization model; Figure 1 read destination media stream.). Ishibashi also teaches processing means to determine a time difference representing the transmission time difference between the received audio and video data (Figure 2; read 'i' as audio or video stream 'i'; sigma as difference between timestamps) and presenting

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the same identifier, i.e. media stream, from their respective transmit and receive time marks i.e. timestamps, and delay by a value representing the transmission time difference of the received audio data at the first audio communication terminal in relation to the transmission of the received video data at the video communication terminal. (Figure 2; also see discussion on page 1011 regarding inter-stream synchronization and master/slave streams; Section 1 Introduction, read delay as adjust output timing).

15. With regards to Claims 2, 3, and 4 Ishibashi teaches of media stream coding and decoding performed in the application layer (Figure 1) that are received at synchronization service access point. Further, Ishibashi teaches of the concept of inter-stream synchronization between master/slave streams. (Section 4.2, page 1015). Because less processing is required for audio data, the 'faster' audio stream represents the master stream, the video the slave stream i.e. identifier. (page 1011). Daneels teaches that audio (6: [0024]) and video coding and decoding as part of the process to generate multimedia streams.

16. With regards to Claim 5, Daneels teaches of audio and video links that are of a "deterministic" type in Figure 1; i.e. links between FE 102,106 and FE100 video; links between FE 104,108 and FE 100.

17. In reference to Claims 6 and 7, Ishibashi teaches of media stream coding and decoding performed in the application layer (Figure 1) that are received at a common synchronization service access point (SSAP). Daneels teaches of audio and video links that are of a "deterministic" type in Figure 1 whose delays can be sent to the SSAP. Further, Ishibashi teaches that time difference can be derived from time markings i.e. timestamps between tightly coupled media-streams such as audio and video (Section 4.2.1 and Figure 4). Further, Ishibashi teaches of the concept of inter-stream synchronization between master/slave streams. Because of relative shorter period required to process audio data, the audio stream represents the master stream, the video the slave stream (Page 1011).

18. With regard to Claim 10, Daneel's Conference System (Figure 1, FE 100) represents a connection means that provides a proxy type function for audio and video data to the network LAN.

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19. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Danneels et al (U.S. Patent 5663951), hereafter Danneels in view of Ishibashi et al, A Synchronization Mechanism for Continuous Media in Multimedia Communication, INFOCOM '95. Fourteenth Annual Joint Conference of the IEEE Computer and Communications Societies; Bringing Information to People. Proceedings. IEEE 2-6 April 1995 Page(s): 1010 - 1019 vol.3 hereafter Ishibashi, and in further view of Little et al, Network and Operating Systems Support for Digital Audio and Video: Proceedings, 5th International Workshop on Network and Operating Systems Support for Digital Audio and Video, Springer 1995, hereafter Little.
20. Danneels and Ishibashi teach the limitations of Claim 2 but are silent in teaching assignment of priority levels to audio and video data to be transmitted or assigning a lower priority to video data relative to audio data.
21. By contrast, Little teaches in the traffic characteristics and flow control that video streams have lower priority than higher priority audio, i.e. read jitter as characteristic of audio streams. (Page 168 - 169; Traffic Characteristics and Flow Control section).
22. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify inter-stream synchronization between audio and teachings of Danneels and Ishibashi with the audio visual (A/V) priority teachings of Little.
23. By transporting audio streams across a network with a higher priority relative to its companion video stream, the random arrival time of A/V packets at the destination port is mitigated and the distribution of both packet classes are more tightly bounded. This is ultimately advantageous in improving the synchronization of the two data streams.
24. Claims 11, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Danneels et al (U.S. Patent 5663951), hereafter Danneels in view of Ishibashi et al, A Synchronization Mechanism for Continuous Media in Multimedia Communication, INFOCOM '95. Fourteenth Annual Joint Conference of the IEEE Computer and Communications Societies. Bringing Information to People. Proceedings.

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IEEE 2-6 April 1995 Page(s): 1010 - 1019 vol.3 hereafter Ishibashi, and in further view of Keshab et al, Digital Signal Processing for Multimedia Systems, CRC Press 1999 pg 245 and 274, hereafter Keshab.

25. Danneels and Ishibashi teach the limitations of Claim 1 but are silent in teaching of processing device for an audio, video, or communication unit.

26. Keshab teaches, circa 1999, of recent developments of microprocessors and DSP chips that provide audio and video processing capabilities (page 245, 2nd paragraph). Further, Keshab teaches that developments of microprocessors can be also be used in wireless communications (page 274, 3rd paragraph).

27. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the inter-stream synchronization between audio and teachings of Danneels and Ishibashi incorporating a digital processing device in the video, audio, and communication unit.

28. Processing audio and video signals with a DSP in the video and audio communication unit improves the fidelity of A/V data and digital processing of communication signals efficiently utilizes bandwidth.

Conclusion

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Baron whose telephone number is (571) 270-1748. The examiner can normally be reached on 7:30 AM to 5:00 PM E.S.T. Monday to Friday.

30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

31. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available

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through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HD

HB

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